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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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VEDDER PRICE KAUFMAN & KAMMHOLZ
222 N. LASALLE STREET
CHICAGO, IL 60601

EXAMINER	
NATNAEL, PAULOS M	

ART UNIT	PAPER NUMBER
2614	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/633,463	ORR ET AL.	
	Examiner	Art Unit	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14-16 and 19-25* is/are rejected.

7)☒ Claim(s) *12,13,17 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-3, 8-10 and 19-25** are rejected under 35 U.S.C. 102(e) as being anticipated by Lee, U.S. Pat. No. 6,507,366.

Considering claim **1**, Lee discloses all claimed subject matter, note;

a) the claimed method of "beginning a zoom mode", is met by "initialization of Zoom" step 320, 3A.

b) identifying a first portion of an image, is met by "detect initial image frame", step 330, FIG.3A;

c) displaying the first portion, and displaying the second portion, is met by fig.5 which shows position of the object on the screen.

d) detecting motion of an object within the portion of the image, is met by "Is Motion vector detected" step 350, fig.3A;

e) selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image, is met by "detect subsequent image frame" step 340 and 360 "tracking object", Fig.3A;

f) displaying the second portion, is met by fig.5 which shows position of the object on the screen.

Considering claim **2**, the claimed when at least one edge of the second portion to the image extends beyond the image, terminating the zoom mode, is met by the disclosure in col. 7, lines 1-6 wherein, if it is judged that no more zooming can be performed while the object is not included in the effective region (to be described below), the zoom/focus controller 6 recognizes that the object is beyond the tracking range of the zooming operation, and controls the process to return to step 310 of the initial state (step 371c)."

Considering claim **3,** a method for providing a zoom video tracking image, comprising the step of, measuring a difference between the first portion of the image and the second portion of the image; and when the difference between the first portion of the image and the second portion of the image exceeds a predetermined threshold, terminating the zoom mode;

Regarding claim 3, see rejection of claim 2;

Considering claim **8**, see rejection of claim 1;

Considering claim **9**, see rejection of claim 2;

Considering claim **10**, measuring a difference between the first portion of the image and the second portion of the image; and when the difference between the first portion of the image and the second portion of the image exceeds a predetermined threshold, terminating the zoom mode.

Regarding claim 10, see rejection of claim 2;

Considering claim **19**, (new), wherein the second portion of the image is selected such that the at least one object remains within the second portion of the image.

Regarding claim **19**, see rejection of claim 1(e);

Considering claim **20**, wherein the object is a single object within the portion of the image, is met by the step of tracking object 360, fig.3A.

Considering claim **21**, see rejection of claim 1.

Considering claim **22**, see rejection of claim 1.

Considering claim **23**, the claimed adjusting at least one of a horizontal position and a vertical position of the zoom image relative to the full frame, is met by Fig.5;

Considering claim **24**, wherein motion is detected for a single object within the zoom image;

Regarding claim 24, see rejection of claim 1(d).

Considering claim **25**, including adjusting a ratio of a zoom area included within the zoom image and a full frame area included within the full frame, is met by Fig. 5;

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **4,11,** are again rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al., U.S. Pat. No. 5,923,365.

Considering claim **4,** the method of claim 1, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the step of detecting motion of an object within the portion of the image includes a step of examining MPEG2

motion vectors;

Regarding claim 4, Lee discloses the method and apparatus for automatically tracking a moving object. Lee also discloses detecting motion vectors. Lee does not specifically disclose an MPEG image. However, MPEG as a video standard is well known in the television art, therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Lee, in order to effectively utilize the MPEG standard, making the system of Lee more versatile and useful.

Considering claim **11**, see rejection of claim 4;

5. Claims **5-7 and 14-16** are again rejected under 35 U.S.C. 103(a) as being unpatentable over Tamir et al., U.S. Pat. No. 5,923,365 in view of Lee, U.S. Pat. No. 6,507,366.

Considering claim **5**, Tamir discloses the following claimed subject matter, note;

b) a video signal processor ... operative to select a portion of the video image to provide a selected portion of the video image is met by Host computer 30 and the image analyzer 50 (FIG.1);

c) the video signal processor ... is met by Host computer 30 and the image analyzer 50 (FIG.1); (see col. 8, lines 53-54)

Except for;

a) the claimed tuner operative to receive a video image;

d) while all edges of the selected portion of the video image are within the video image to zoom to the selected portion of the video image, to detect movement of an object within the selected portion of the video image, and to select a second portion of the video image to redefine the selected portion of the video image

Regarding a), Tamir et al. do not disclose a tuner. However, Examiner takes an Official Notice here in that a tuner is a very well known device in the art and, therefore, it would have been obvious to the skilled in the art at the time the invention was made to provide a tuner device and modify the system of Tamir et al.

Regarding d), Tamir et al does not specifically and entirely disclose the limitation claimed in claim 5 (d). However, Tamir et al. discloses, "The tracking procedure takes into account the fact that there may be a change of magnification (zoom in and out) and of objects' poses through the succession of frames." (col. 10, lines 10-13) Besides, the zoom mode is well known in the art, and in fact Tamir discloses zooming at the images F1, F2, and F3 in Fig.4. For, without zooming or picking this image out of the entire field or court as shown in Fig.2, the system would not be able to process the desired image.

Lee clearly indicates the initialization or the beginning or the start (whatever word one wants to use) of the zoom process in Figs. 1 and 3A. After zooming on a desired portion of the image, Lee detect initial image frame, subsequent image frame, motion vector, and tracks the object in question, etc.

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Tamir by providing it with a zooming mode or initialization of Zoom at the beginning of the process, in order to focus on the desired portion of the image for reliable and efficient processing, because without specifically focusing or zooming on the desired portion of the image, the process would not be completely effective or would not even work properly.

Considering claim **6,** wherein the video signal processor is further operative to determine a difference between the first portion of the video image and the second portion of the video image, and to cancel zoom in response to the difference exceeding a predetermined threshold.

Regarding claim 6, Tamir does not specifically disclose canceling zoom, although Tamir suggests a zoom mode would be utilized as in Fig.4, because without zooming on the desired image as in Fig. 4, the processing would not effectively performed.

Lee discloses that if it is judged that no more zooming can be performed while the object is not included in the effective region (to be described below), the zoom/focus controller 6 recognizes that the object is beyond the tracking range of the zooming

operation, and controls the process to return to step 310 of the initial state (step 371c)." (col. 7, lines 1-6)

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Tamir by calculating the difference between the two portion and recognizing that the object is beyond tracking range and thus terminating the zoom and return to the initialization step, thus giving the system of Tamir an simple, yet effective control of the zoom process.

Considering claim **7**, the television system of claim 5, wherein the television system is one of set top box, a desk top box, and a personal digital assistant is met by Fig.1;

Considering claim **14**, Tamir et al. disclose the following claimed subject matter, note;
a) a tuner operative to receive a video image;
b) a video signal processor coupled to the tuner and operative to select a portion of a full frame of the video image to provide a selected portion of the video image;
c) the video processor also operative, while all edges of the selected portion of the video image are within the video image, to zoom to the selected portion of the video image and display in a zoom frame, to detect movement of an object within the selected portion of the video image, and to select a second portion of the video image to redefine the selected portion of the video image and display in the zoom frame.

Regarding claim 14, see rejection of claim 5;

Considering claim **15**, wherein the video signal processor is further operative to determine a difference between the first portion of the video image and the second portion of the video image, and to cancel zoom in response to the difference exceeding a predetermined threshold.

Regarding claim 15, see rejection of claim 6.

Considering claim **16**, the claimed wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the step of detecting motion of an object within the portion of the image includes a step of examining MPEG2 motion vectors, is met by the disclosure that "The optibase JPG-2000 board is using Motion JPEG algorithm for compression; other algorithm, such as MPEG, may also be used. (see col. 6, lines 56-58)

Response to Arguments

Applicant's Arguments

The applicant thereby challenges the Examiner's assertion that such a device [tuner] as arranged in the claims is very well known in the light of the teachings of Tamir in the context of the Tamir's sports analysis system...

Examiner's Response

Tamir et al discloses a sports event video manipulation system. Tamir's system is specifically for ***television*** event. It is well known in the art that television receivers use a tuner to tune to certain channel or frequency of the broadcast in order to intercept or receive the broadcast signal. Given a reasonably broad interpretation, therefore, system of Tamir could as well be used or the signal could be received some distance away from the actual location of the sports events and processed by the equipment as detailed by the Tamir reference. Hence, the argument that the system of Tamir does not have to use or does not need a tuner is unpersuasive.

6. Applicant's argument with respect to claims 1-4,8-11 19-25 have been carefully considered but is moot in view of the new ground(s) of rejection.

Allowable Subject Matter

7. Claims **12,13, 17 and 18** are again objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose a method of providing zoom video tracking image,

wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein in the step of examining MPEG2 motion vectors, a compensated MPEG2 motion vector for objects in the first potion of the image is determined by eliminating an MPEG2 motion vector of the entire portion of the image taken as a whole from the MPEG2 motion vector of the object in the first portion of the image, as in claim 12;

wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein the step of examining MPEG2 motion vectors comprises determining that an object has a larger motion vector in one direction when observed in a full frame of the image, and has a smaller motion vector when observed in a zoom frame in order to identify panning of the image, as in claim 13;

wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein video signal processor is further operative to determine a compensated MPEG2 motion vector for objects in the first potion of the image by eliminating an MPEG2 motion vector of the entire portion of the image taken as a whole from the MPEG2 motion vector of the object in the first portion of the image, as in claims **17**;

wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein video signal processor is further operative to determine that an object has a larger motion vector in one direction when observed in a full frame of the image, and has a smaller motion vector when observed in a zoom frame in order to identify panning of the image, as in claim **18**;

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMN
April 16, 2004

MICHAEL H. LEE
PRIMARY EXAMINER